

LOCHT et al
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AMENDMENTS TO THE ABSTRACT:

Before the Figures, insert the Abstract submitted herewith on a separate sheet.

Abstract

A recombinant DNA containing a sequence (1) coding for a polypeptide heterologous to a filamentous haemagglutinin of *Bordetella* (Fha) fused within the reading frame to a sequence (2) located upstream from the first sequence. Sequence (2) codes for at least part of the Fha precursor, which part comprises at least the N-terminal region of a truncated mature Fha protein, which contains the interaction site of Fha and heparin and the secretion domain. This Fha protein is under the control of a promoter recognized by the cell polymerases of *B. pertussis* and is inserted into a *B. pertussis* cell culture, is expressed in the culture and excreted into the cell culture medium. The invention uses both the abilities of *Bordetella* and particularly *B. pertussis* to secrete or surface expose the heterologous polypeptide fused to the Fha portion corresponding to sequence (2), which does not appear to produce extracellular proteases, and the ease with which filamentous haemagglutinins can be isolated from other *Bordetella* proteins.